

**REMARKS**

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1, 3-7, 9 and 11-12 are currently pending in this application. No new matter has been added by way of the present amendment. For instance, the amendment to claims 1, 3-7, 9 and 11-12 is supported by the Specification at, for example, page 1, lines 8-9. Accordingly, no new matter has been added.

At the outset, the present application is believed to be in condition for allowance. Entry of the accompanying amendment is requested under 37 C.F.R. §1.116, as the amendment does not raise any new issues which would require further search and/or consideration by the Examiner. Furthermore, Applicants request entry of this amendment in order to place the claims in better form for consideration on Appeal.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

**Issues Under 35 U.S.C. § 103(a)**

Claims 1-7, 9 and 11-12 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Stine (U.S. 5,847,252) (hereinafter Stine '252) in view of Lyman et al. (U.S. 2,135,823) (hereinafter Lyman '823). Applicants respectfully traverse.

The Examiner asserts that Stine '252 discloses a process for producing a motor fuel component that comprises paraffins by hydrotreating an olefinic stream obtained from a process in which butanes are dimerized, wherein the olefinic stream contains C<sub>8</sub> through C<sub>12</sub> hydrocarbons, the hydrotreating is performed by passing the olefinic stream through a series of

two reactors, each hydrotreating reactor contains a catalyst such as a noble metal on an alumina support and the reactors contain a fixed bed of catalyst. Furthermore, the Examiner asserts that "it is clear" that these reactors are trickle-bed reactors because "reactants flow downward". The Examiner acknowledges that Stine '252 does not disclose that the feed is in liquid phase, that the feed contains sulfur compounds, or that the catalyst contains specified amounts of metals. Furthermore, the Examiner acknowledges that Stine '252 does not disclose the specific conditions for each reactor. The Examiner relies on the teachings of Lyman '823 to overcome these deficiencies.

In response to our previous argument that the feed to the hydrogenation zone in Stein '252 is not in the liquid phase because it contains only 10% of heavier components, the Examiner asserts that "Stein doe (sic) not limit to the data from...the examples". The Examiner further asserts that "the Examiner has modified...by utilizing a liquid feed having the claimed composition".

In response to our previous argument that the reactor disclosed by Stein '252 is not a trickle-bed reactor, the Examiner asserts that this reactor is a trickle-bed reactor because the reactants flow downward, and furthermore asserts that "the examiner has modified the process of Stine by using the claimed feed in liquid state, so the reactor would operated (sic) as trickle bed reactors as claimed".

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Furthermore, there must be a reason why one of

ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

The present invention is directed to a process for the manufacture of paraffinic hydrocarbons, comprising hydrogenating in two steps a mainly olefinic **liquid** (emphasis added) feedstock comprising **80-97 wt% of C<sub>8</sub> olefins** (emphasis added), 3-20 wt% of C<sub>12</sub> olefins and 0.1-7wt% of C<sub>9</sub>, C<sub>10</sub>, C<sub>11</sub> and olefins heavier than C<sub>12</sub>. The novel process of the present invention requires the use of a **trickle bed reactor** (emphasis added).

Initially, Applicants note that the Examiner has not addressed Applicants' Declaration Under 37 C.F.R. 1.132, submitted on July 26, 2007. As evidenced by said Declaration, the reactor of Stine '252 is **not a trickle-bed reactor** (emphasis added).

Furthermore, as acknowledged by the Examiner, Stine '252 fails to disclose the use of a feedstock comprising 1-1000 wt-ppm of sulphur compounds. The Examiner asserts that "by using a sulfur-containing feed, the product would necessarily be desulfurized in the hydrotreating step or Stine". Applicants respectfully submit that one of ordinary skill in the art would not be

motivated to utilize sulphur compounds in the feedstock merely to have an opportunity to remove said compounds at a later stage, as asserted by the Examiner. Lyman '823 fails to cure the deficiencies of Stine '252.

Lyman '823 is directed to a process for the production of motor fuels from the polymerization of normally gaseous olefins. In the process of Lyman '823, gas-containing olefins of from 2 to 5 carbon atoms per molecule are allowed to pass over a phosphoric acid-film catalyst, yielding a liquid olefinic polymer product, which is subsequently hydrogenated. On page 4, second paragraph, lines 32-62, it is stated that the gas contains numerous sulfur-containing substances. Those of acidic nature are condensed with an olefine double bond during the polymerization, thereby forming sulfur bodies in the product which are very difficult to remove. Thus, washing the gas with an alkaline solution prior to passage over the catalyst is recommended. Clearly, Lyman '823 teaches that the sulfur compounds should be removed before the process. It is thus evident that the process of Lyman '823 is not suitable for removal of sulfur; rather, sulfur must be removed prior to processing.

Evidently, the cited references, alone or in combination, fail to teach or suggest every limitation of the instant invention. For this reason alone, this rejection should be withdrawn.

Furthermore, assuming *arguendo* that Lyman '823 cured the deficiencies of Stine '252 (a point which Applicants do not concede), it is noted that references cannot be arbitrarily combined. There must be some reason why one of ordinary skill in the art would be motivated to make the proposed combination of the primary and secondary references. *In re Nomtya*, 184 USPQ 607 (CCPA 1975). Courts have clearly established that, even when a combination of references teaches every element of a claimed invention, a rejection based on a *prima facie* case

of obviousness is improper absent a motivation to combine. *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

Applicants respectfully submit that one skilled in the art would have not been motivated to modify the teachings of Stine '252 or to combine the teachings of Stine '252 with those of Lyman '823. Furthermore, one skilled in the art would not have been motivated to utilize the specific olefins of the present invention, at specific concentrations, specifically in a trickle-bed reactor at the specific conditions of the present invention. Furthermore, the combination of Stine '252 and Lyman '823 does not result in the presently claimed process.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

### Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Andrew D. Meikle, Reg. No. 32,868 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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